

Work Order ID 84235

May-08-12 10:37:41 AM

84235

PRELIMINARY ISSUE Page 1

Item ID: D350-748-143TRN

Accept

N9000040100

Setup Start *NS1*

Revision ID: PRELIM

Stop *NS2*

Item Name: Crosstube Turning Detail

Start Date: 5/08/12 Start Qty: 1.00

1

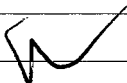
Cust Item ID:

Required Date: 5/15/12 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan:  Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D350-748-143

PA1

100

0.00

100

MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs on both ends as per Folio _____

2-Turn first side as per Folio _____

3- File transition lines smooth.

FOLIO REV: _____

DWG REV: _____

N/A

1 / KC 12-5-14

110

QC1- Inspect dimensions to dimension sheet

0.00

110

QC

Memo

0.00

Quality Control

1 / KC 12-5-14

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May-08-12 10:37:41 AM

Item ID: D350-748-143TRN

Accept

N900040100

Setup Start ***NS1***

Revision ID: PRELIM

Stop ***NS2***

Item Name: Crosstube Turning Detail

Start Date: 5/08/12 Start Qty: 1.00

1

Cust Item ID:

Required Date: 5/15/12 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120		0.00							
120	MORI SEIKI CNC LATHE LARGE								
Mori Seiki	Memo	0.00							
Mori Seiki CNC Lathe Large	1-Turn second side as per Folio _____ 2- File transition lines smooth. 3-Scribe Part & Batch as per Dwg D350-748-143 <i>N/A</i> FOLIO REV: _____ DWG REV: _____								
130	QC1- Inspect dimensions to dimension sheet	0.00							
130									
QC	Memo	0.00							
Quality Control									
140	QC8- Inspect parts - second check	0.00							
140									
QC	Memo	0.00							
Quality Control									

Handwritten notes and signatures:
 1. *[Signature]* 12-5-14
 1. *[Signature]* 12-5-14
 DP 12-5-14

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May-08-12 10:37:41 AM

Item ID: D350-748-143TRN Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: PRELIM Stop ***NS2***
 Item Name: Crosstube Turning Detail
 Start Date: 5/08/12 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 5/15/12 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150		0.00							
150	Large Fab								
Crosstubes	Memo	0.00							
Crosstubes	1-Grind machining marks								
190		0.00							
190	Packaging								
Packaging	Memo	0.00							
Packaging	Identify and stock in kanban rack								
	Location: <u>46</u>								
200		0.00							
200	QC21- Final Inspection - Work Order Release								
QC	Memo	0.00							
Quality Control									

W 120523

POSITIVE RECALL
 EFFECTIVE 120508 AUTH h
 RELEASED _____ DATE _____

Picklist Print

May-08-12 10:37:40 AM

Page 1

Work Order ID: 84235

Parent Item: D350-748-143TRN

Start Date: 5/08/12

Required Date: 5/15/12

Parent Item Name: Crosstube Turning Detail

Start Qty: 1.00

Required Qty: 1.00

Comments: NEW ISSUE - PRELIM - LL 12.05.08

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6021-125 Crosstube Material - 17-4PH SS		Manufactured	No				Each	0.0000		384152			

8 7 6 5 4 3 2 1

Item	Qty -143	Part Number	Description
1	X	D350-748-143	CROSSTUBE ASSEMBLY (AS 350/355 HI FWD)
2	1	D6021-125	CROSSTUBE
3	2	D3502-1	SUPPORT
4	2	D3595-063-430	RUBBER CUSHION
5	1	AELS-1032-225	INSERT
6	1	NAS1149D0363J	WASHER (OR AN960JD10)
7	2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
8	1	MS27039-1-10	SCREW

GENERAL NOTES:

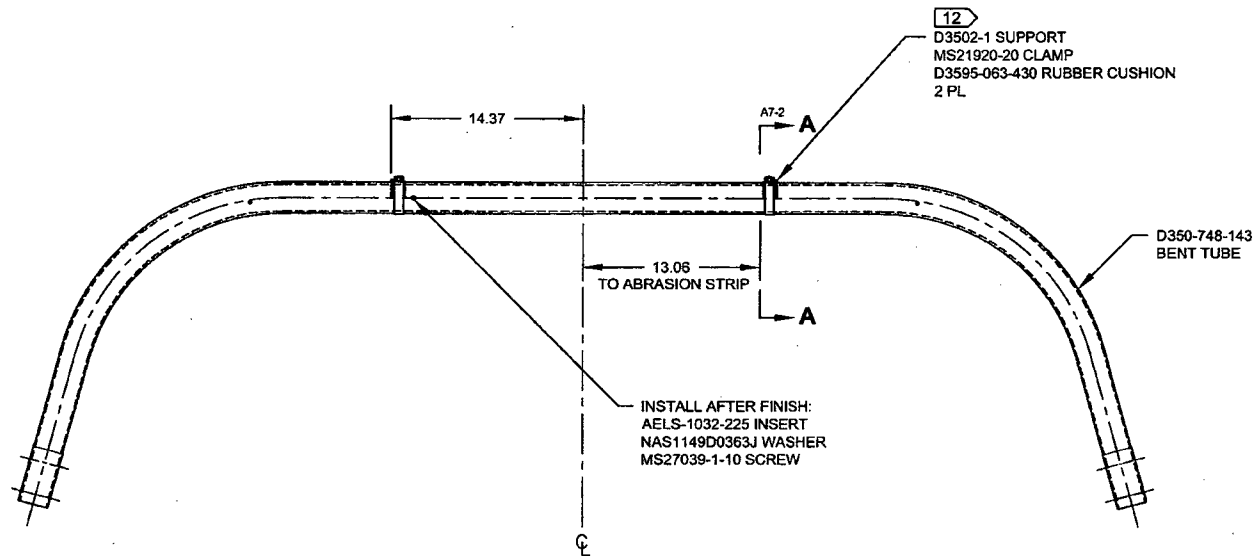
- 1) MATERIAL: MANUFACTURED FROM D6021-125 (17-4PH)
FINISHED LENGTH = 122.270±0.06
- 2) FINISH: PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: DART PART NUMBER "D350-748-143" AND BATCH NUMBER ON INSIDE OF CUFF
PER DART QSI 044 6.4 (VIBRATING STYLUS)
- 7) WEIGHT: 30.45 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0.297 HOLE.
- 9) BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO
BENDING IS 6% BASED ON O.D.
- 11) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES,
NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY.
CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE
MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO
CRACKING/CHIPPING/GROOVES.
- 12) TORQUE CLAMPS 60 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT
NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 13) MAX TWIST AFTER BENDING: WITH XTUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN
CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.25 (ZN C1-3).

PRELIMINARY ISSUE

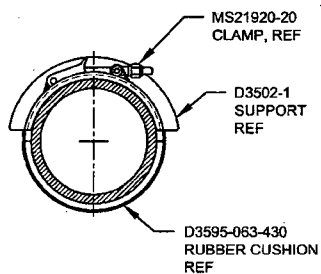
Rev. PA1 12.01.30

PA1	NEW ISSUE	CP	12.01.26
REV.	DESCRIPTION	BY	DATE
DESIGN	PA1	DART AEROSPACE LTD	
DRAWN	PA1	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. X PA1
MFG. APPR.		D350-748-143	SHEET 1 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	12.01.26	COPYRIGHT © 2012 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE REPRODUCED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

8 7 6 5 4 3 2 1



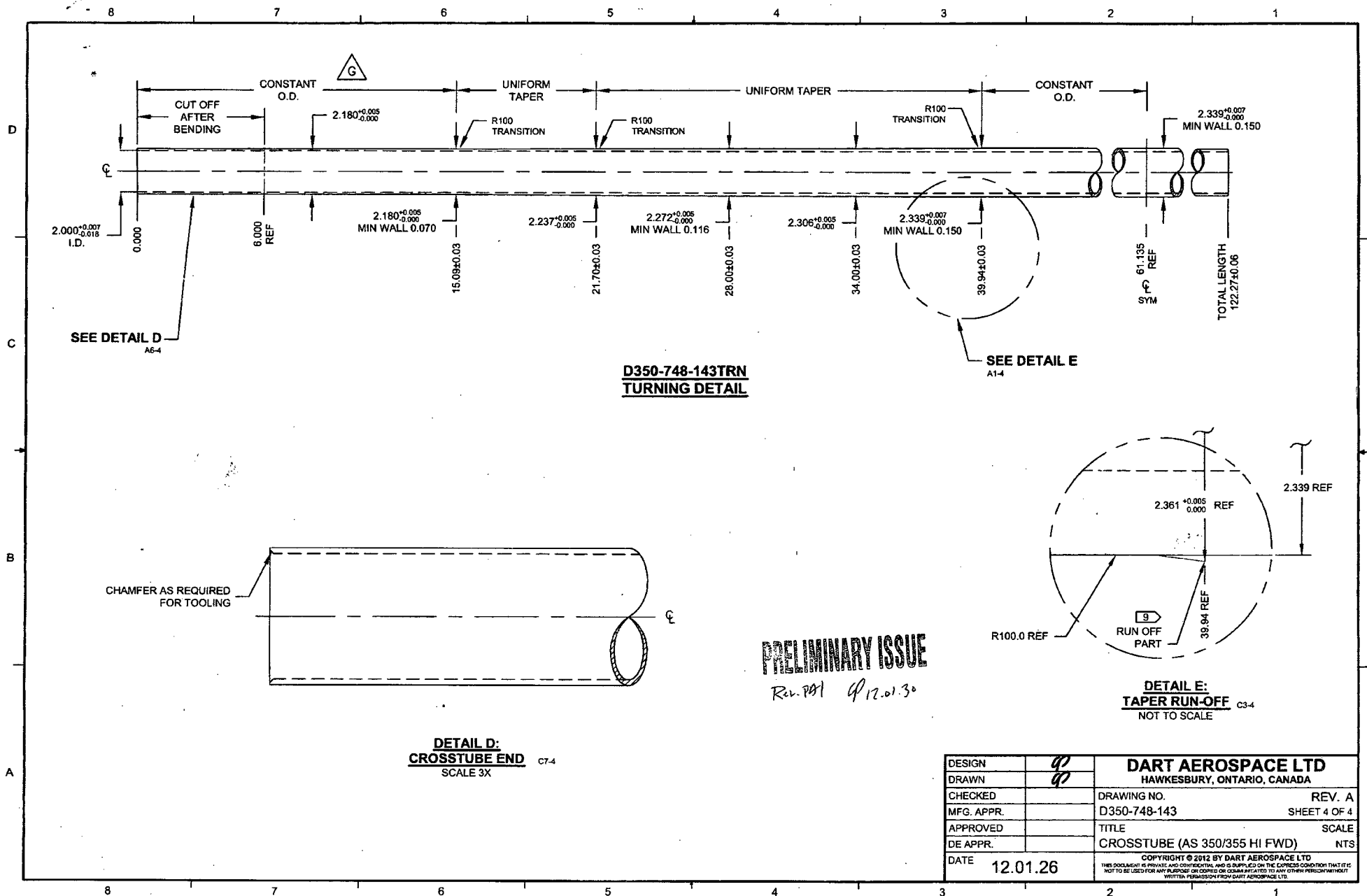
**D350-748-143
ASSEMBLY DETAIL**



SECTION A-A D4-2
SCALE 4X

REVISION
Rev. PAI 12.01.30

DESIGN	90	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	90		
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D350-748-143	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	12.01.26	COPYRIGHT © 2012 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	



Tube #1

Side A

2.180 +	.005	→	2.181
2.180 +	.005	→	2.184
2.237 +	.005	→	2.241
2.272 +	.005	→	2.277
2.306 +	.005	→	2.305
2.339 +	.005	→	2.346 2.334

Side B

2.220 +	.060	→	2.280
2.180 +	.005	→	2.178
2.180 +	.005	→	2.181
2.237 +	.005	→	2.235
2.272 +	.005	→	2.272
2.306 +	.005	→	2.313
2.339 +	.005	→	2.346 2.344
122.270 +	.060	→	122.280

Heckman



DART AEROSPACE LTD		Work Order: 84235
Description:		Part Number: 350-748-143
Inspection Dwg:	Rev:	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article

☒ Prototype

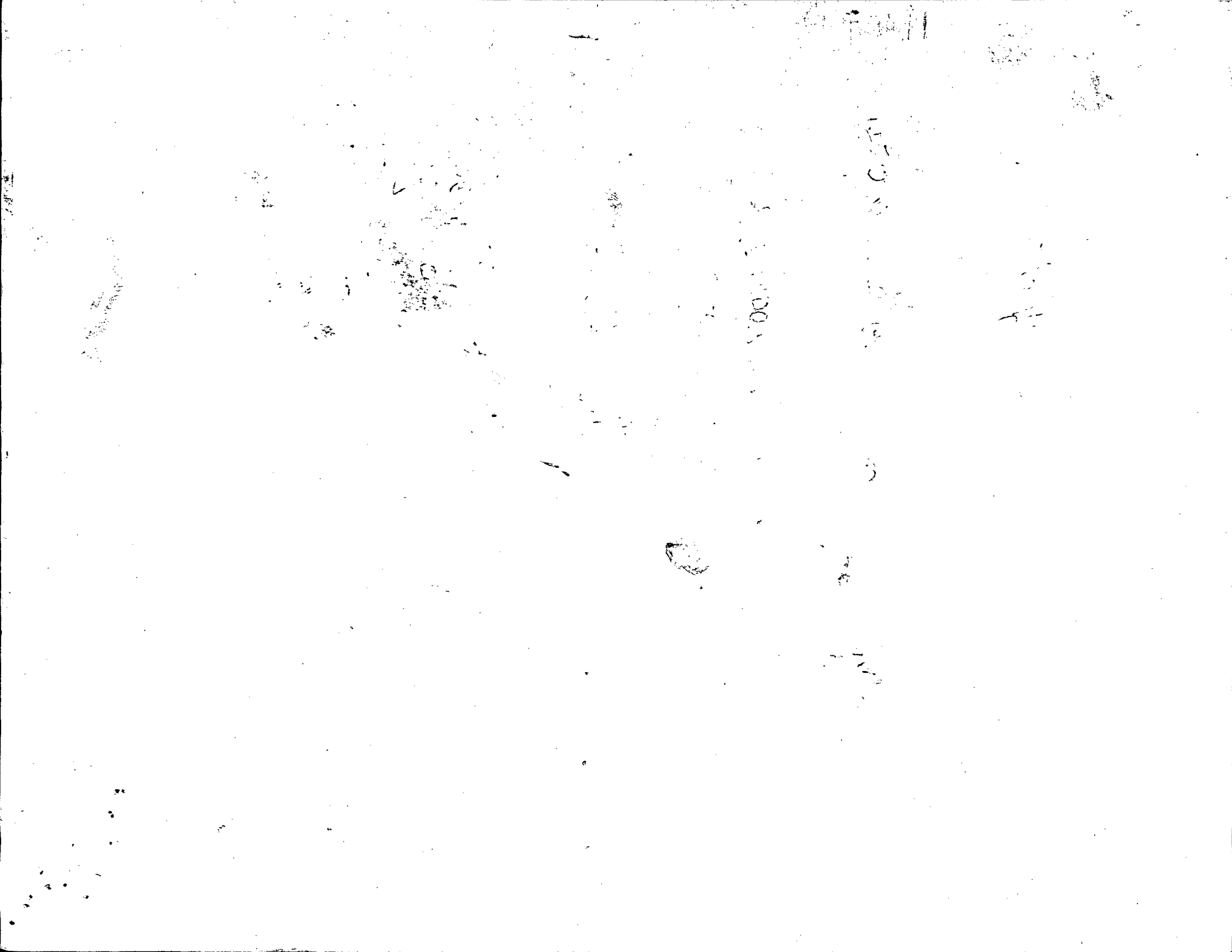
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
2.180	± 0.005	2.181	✓		vern	cwc-08
2.180	± 0.005	2.184	✓		↓	
2.237	± 0.005	2.241	✓			
2.272	± 0.005	2.277	✓			
2.306	± 0.005	2.305		✓		
2.339	± 0.007	2.339	✓			
2.180	± 0.005	2.178		✓	vern	cwc-08
2.180	± 0.005	2.181	✓		↓	
2.237	± 0.005	2.235		✓		
2.272	± 0.005	2.272	✓			
2.306	± 0.005	2.313		✓		
2.339						
2.339	± 0.007	2.344	✓		↓	
122.270	± 0.060	122.280	✓		type	ED-11

Measured by: MM.L
Date: 12/05/11

Audited by: LP
Date: 12-5-14

Prototype Approval: Q
Date: 12.05.14

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/JLM	



ULTRA SONIC MEASUREMENTS

Side	LOCATION on tube	R1	R2	R3	R4
		.071	.149		
A		.090	.164		
		.089	.177		
		.091	.180		

B		.084	.159		
		.089	.158		
		.068	.147		
		.087	.153		
		Part number	A350-748-143 TRW		
		Batch number	Q4235		
		Measured By	KLC 12-5-14		

